

PATENT ABSTRACTS OF JAPAN

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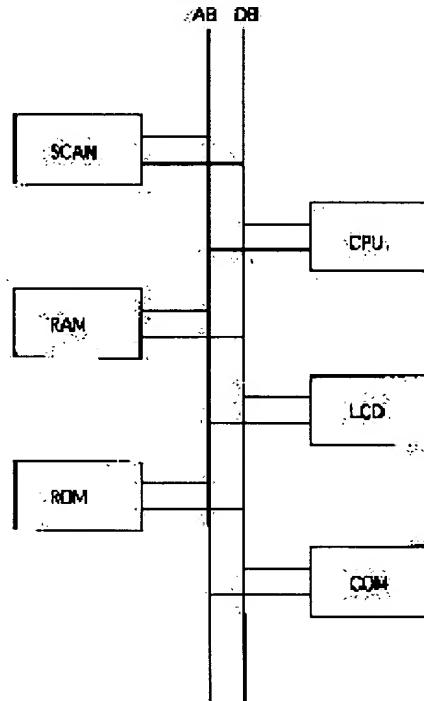
(54) IMAGE PROCESSING UNIT

(57) Abstract:

PURPOSE: To prevent useless transmission and reception of image data by identifying invalid received image data and informing it to the user.

CONSTITUTION: An original read by a scanner SCAN is stored in an image data area of a RAM and a CPU reads one line of the data and compares the contrast with a threshold contrast stored in the RAM. When the contrast is high and the data are discriminated to be valid, the image data are outputted via an interface CON.

Furthermore, when the contrast is small and the data are discriminated to be invalid, the invalid data are displayed on a liquid crystal display device LCD for the information to the user. Thus, useless transmission/ reception of data of white paper is prevented by providing a means identifying valid/invalid image data to inform it to the user between an image input means and an image output means.



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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to an image processing system.

[0002]

[Description of the Prior Art] Conventionally, with this kind of equipment, the decision of the effective and the invalid of the manuscript for generating image data of decision of extent of the contrast of a manuscript was left to the user.

[0003] That is, the user looked at the concentration of a manuscript, it judged whether it is a deep manuscript or it was a thin manuscript, and sensitivity settling of a picture input device etc. was performed.

[0004]

[Problem(s) to be Solved by the Invention] However, with the equipment of the above-mentioned conventional example, even if it was the case where the contrast of a manuscript was too low to generate normal image data, it was unconditionally image-data-ized by incorrect decision of a user, and the object which a user means for the abnormal image data was, without the ability attaining enough. In the extreme example, even when the front flesh side of a manuscript was mistaken at the time of facsimile transmission, facsimile apparatus had transmitted the blank paper to the partner by ***** decision of a user. moreover, the case where the equipment of a receiving side also receives the data of a blank paper -- decision of the user of a transmitting side -- the blank paper was outputted as it is (printing).

Consequently, the object (transmission of a document) which the user meant was not attained, but a waste of a resource called the time amount and the form from an addressee side of retransmitting again at a request had generated it.

[0005] Then, the object of this invention is to offer the image processing system which solved the above problems.

[0006]

[Means for Solving the Problem] In order to attain the above-mentioned object, it is characterized by equipping this invention with an image entry-of-data means, an output means to output said inputted image data, a discernment means to identify the validity and the invalid about the image data concerned based on said inputted image data, and an advice means to notify that said discernment is invalid.

[0007]

[Function] according to this invention -- time input image data is invalid, for example -- it -- a user -- advice -- things can protect now a waste of the resource by the input and output of an invalid manuscript.

[0008]

[Example] Hereafter, the example of this invention is explained to a detail with reference to a drawing.

[0009] Drawing 1 is a drawing which expresses the description of this invention best, in a, an invalid manuscript discernment means and c express the advice means of an invalid manuscript, and, as for d, an image data input means and b express the image data output means.

[0010] It specializes in the concrete configuration of each means, and the operation to some extent for every example.

[0011] (The 1st example: Image scanner) The configuration of the 1st example is shown in drawing 2. In drawing 2, a21 is a manuscript base as an image data input means to read the manuscript (e) printed by paper etc. An invalid manuscript discernment means to identify whether the read image data is a blank paper without an invalid, i.e., contrast, is built in the case. c22 is a liquid crystal display (LCD) as an advice means of an invalid manuscript to notify a user of a manuscript being a blank paper, when the blank paper has been recognized. d23 is an image data output means to output to the device (f) (for example, personal computer) to which the read image data is connected.

[0012] When actuation of the 1st of this example performs a scan and an output and finished reading the manuscript of one sheet by the case where it outputs to the device by which the image data read to coincidence is connected with scanning a manuscript, investigating the existence of the contrast of image data, it notifies a user of whether that image data is effective or invalid. Since the 2nd actuation has read the manuscript of one sheet, it investigates the read image data by the case where it outputs to the device to which image data is connected, and it outputs it to the device to which image data is connected after advice effective [image data] or invalid.

[0013] A user is notified of whether reading of the manuscript was normally performed immediately after reading the manuscript of one sheet in any case. When it is judged that there is no contrast, a user performs adjustment of reading sensibility etc. and reads again. Especially in the case of the 2nd example of operation, there is the description that the propriety of reading is known, without applying a burden to a connection device.

[0014] Next, detailed configuration of the example of this invention and actuation are explained using a drawing.

[0015] Drawing 7 and drawing 8 express the configuration and actuation of the 1st of the actuation 2 of an example. Drawing 7 is drawing explaining the internal configuration of an example, AB is an address bus, DB is a data bus, and an exchange of the data between the below-mentioned each part articles is performed through this bus. SCAN is an image scanner as an image data input means, scans the manuscript put on the manuscript base, and generates image data based on the difference of contrast. RAM is random access memory and is used as a storing location of the threshold for performing the location for the memory of the read image data, the invalid of image data, and effective distinction etc. ROM is a read only memory and stores the procedure of the below-mentioned processing etc. LCD is the liquid crystal display components as an advice means of an invalid manuscript. COMs are interface components with a connection device, and constitute an image data output means. CPU is a central processing unit and controls each part article and image data according to the procedure in ROM.

[0016] Next, actuation of an example is explained to a detail focusing on actuation used as the description of this invention based on the flow chart of drawing 8.

[0017] In step S1, a manuscript is first read from SCAN, and it stores in the area for the image data in RAM. Since it can carry out by the Prior art, detailed explanation is omitted.

[0018] In step S2, one line of the stored image data is read and the data is compared with the threshold beforehand set up based on the existence of contrast in step S3. When it is effective large data, i.e., contrast, with larger image data than a threshold, it progresses to step S7. The case of : with data smaller than a threshold, i.e., invalid data, progresses to step S4.

[0019] In step S4, if it has not completed, in order to distinguish whether the comparison to the last data was completed, and to investigate the next line, it progresses to step S2. When the comparison to the last data is completed, the image data becomes decision of being invalid, and progresses to step S5.

[0020] In step S5, it indicates that the image data read into LCD is invalid, and it is displayed that directions of whether to output the read image data to a connection device are inputted.

[0021] In waiting and a termination, the directions from a user are progressed to termination of operation at continuing step S6. When continuation, i.e., the output of image data, was directed, or when there are no directions from a user between fixed time amount, it progresses to step S7.

[0022] In step S7, the read image data is outputted to a connection device, and actuation is ended.

[0023] [Other Example(s)]

(The 2nd example: FAX (facsimile) transmitter) Although the 2nd example is the same as the 1st example almost, not a device but the telephone line for FAX is connected. The configuration of this example is shown in drawing 3. In drawing 3, a31 is an image reading means as an image data input means to read the manuscript (e) printed by paper etc. An invalid manuscript discernment means to identify whether the read image data is a blank paper without an invalid, i.e., contrast, is built in in the case. c32 is a liquid crystal display as an advice means of an invalid manuscript to notify a user of a manuscript being a blank paper, when the blank paper has been recognized. d33 is an image data output means (specifically FAX modem) to output to the telephone line to which the read image data is connected.

[0024] Since an internal configuration is the same as that of the 1st example (drawing 7), explanation is omitted.

[0025] When actuation of the 1st of this example performs scan and transmission and finished reading the manuscript of one sheet by the case where the image data read to scanning a manuscript and coincidence is transmitted, investigating the existence of the contrast of image data after a line connection, it notifies a user of whether that image data is effective or invalid. Since the 2nd actuation has read the 1st sheet thru/or all manuscripts, it investigates the read image data by the case where connect a circuit and it transmits, and it transmits image data after advice effective [image data] or invalid.

[0026] - manuscript is notified [whether immediately after reading the manuscript of one sheet in any case, reading of the manuscript was performed normally, and / a front flesh side, on the contrary] to whether it has placed by the user. Mistake a front flesh side, or when the alphabetic character of a manuscript etc. is judged that are thin and there is no contrast, a user corrects a front flesh side, or it reads, adjustment of sensibility etc. is performed and it transmits again.

[0027] Especially in the case of the 2nd example of operation, before connecting a circuit, since it can retransmit a message, transmission of the manuscript of a blank paper can be prevented. The above actuation is the same as that of the 1st example (drawing 8).

[0028] (The 3rd example: FAX receiver) The 3rd example is performed from the telephone line for FAX in an image entry of data in the receiving side of the 2nd example. The configuration of this example is shown in drawing 4. In drawing 4, a41 is the FAX modem connected to the telephone line which is an image data input means. An invalid manuscript discernment means to identify whether the received image data is a blank paper without an invalid, i.e., contrast, is built in in the case. c is a liquid crystal display as an advice means of an invalid manuscript to notify a user of a manuscript (sent image data) being a blank paper, when the blank paper has been recognized. d is the recording paper as an image data output means to memorize or print the sent image data, and is built in the case.

[0029] The internal configuration of this example and actuation are the same as that of drawing 7 and drawing 8, and after connecting through FAX and the circuit of a transmitting agency like the usual FAX reception, the image data which has received is investigated. When the blank paper has been sent continuously, I hear that possibility that the manuscript, transmission, is table back reverse is high, and he leaves decision whether it receives continuously henceforth or it does not carry out to the user of a receiving side.

[0030] This can protect a waste of the paper by reception of a blank paper.

[0031] (The 4th example: Copying machine) The 4th example prevents the copy of a blank paper. The configuration of this example is shown in drawing 5. In drawing 5, a51 is a manuscript base which is an image data input means to read the manuscript printed by paper etc. An invalid manuscript discernment means to identify whether the read image data is a blank paper without an invalid, i.e., contrast, is built in the case. 52c is a liquid crystal display as an advice means of an invalid manuscript to notify a user of a manuscript being a blank paper, when the blank paper has been recognized. d53 is an image data output means to print the read image data.

[0032] The internal configuration of this example is the same as that of drawing 7, and actuation asks a user whether continue the copy of subsequent manuscripts, when a manuscript is scanned and even the

1st sheet thru/or the 2nd sheet have been recognized to be blank papers.

[0033] In a double-sided copy, although a blank paper often has a flesh side, although it is an one side copy, when a blank paper continues, decision whether the front flesh side of a manuscript is reverse is performed.

[0034] This can protect the copy of a blank paper.

[0035] (The 5th example: Personal computer FAX transmitting function) The 5th example makes the printing image of the document in a personal computer an image data input instead of the manuscript base of the 2nd example. The configuration of this example is shown in drawing 6. The image data input means which consists of generating a printing image from the document data in a personal computer in drawing 6 is built in the case with an invalid manuscript discernment means by which the generated image data identifies whether it is a blank paper without data, such as an invalid, i.e., an alphabetic character etc., and these are realized by built-in CPU. c61 is CRT as an advice means of an invalid manuscript to notify a user of a manuscript being a blank paper, when the blank paper has been recognized. c62 is an image data output means (specifically FAX modem) to output to the telephone line to which the image data which is a printing image is connected.

[0036] Since the image data generation means is the same as that of the print facility of ordinary document processing system equipment, explanation is omitted. The actuation in the case of this example investigates document data before a line connection, it judges whether there is any page of a blank paper, when there is a page of a blank paper, after checking whether that page is transmitted to a user, a line connection and transmission are performed, and built-in CPU controls these.

[0037] This can protect transmission of an unnecessary blank paper page.

[0038]

[Effect of the Invention] As explained above, it is effective in the ability to prevent a waste of the resource which considers for example, blank paper data as a cause by establishing a means to notify the discernment means of the effective and the invalid of input image data, and its invalid, between an image data input means and an image data output means.

[Translation done.]